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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,720	12/20/2001	Frank Gasparik	01-966	9781

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LSI LOGIC CORPORATION
1621 BARBER LANE
MS: D-106
MILPITAS, CA 95035

EXAMINER	
HUYNH, KIM T	
ART UNIT	**PAPER NUMBER**
2112	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/027,720	GASPARIK, FRANK	
	Examiner	Art Unit	
	Kim T. Huynh	2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 9-12, 20-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Schultz et al. (US Patent 6,445,245)

As per claim 1, Schultz discloses a PCI-X DDR driver for providing internal termination to a transmission line, comprising:

- a driver control; (fig.2, 201, ie Digitally controlled impedance(DCI))
- a plurality of N-channel devices, the plurality of N-channel devices being divided into at least two groups; and (col.2, lines 6-col.3,line 26, ie 1st set, N1-N7 and 2nd set N11-N15)
- a plurality of P-channel devices, the plurality of P-channel devices being divided into at least two groups, (col.2, line 6-col.3, line 26, ie 1st set, P1-P7 and 2nd set P11-P15)
- wherein the driver control(fig.2, 201, ie DCI) is suitable for individually controlling selected ones of the groups of N-channel and P-channel devices on or off for providing internal termination to the transmission

line. (col.4, line 50-col.5, line 7, wherein DCI controls(adjusts)/turn on or off of p and/or n devices until the desired corresponding transmission line termination provided by output driver)

As per claims 9, 20, Schultz discloses wherein the driver control includes an impedance controller for correcting process/voltage/temperature effects. (col.2, lines 38-41)

As per claims 10, 21, Schultz discloses wherein a size of at least one of the groups of N-channel and P-channel devices has its size weighted to provide an output impedance for given process/voltage/temperate conditions. (col.9, line 63-col.10, line 19, wherein termination resistance of resistors implies size weighted provided for output impedance)

As per claims 11,22, Schultz discloses wherein the size of at least one of the groups of N-channel and P-channel devices has its size weighted in conjunction with a discrete resistor. (col.14, lines 12-52, fig. 10, 1011-1013 ie 8r, 4r or 12r, the discrete resistor)

As per claim 12. Schultz discloses PCI-X DDR system, comprising:

- a transmission line; and (fig.5a, 502 ie Zo)

- driver(fig.2, 200 ie output driver) for providing internal termination to the transmission line, the driver including: (col.4, line 66-col.5, line 7)
- a driver control; (fig.2, 201, ie Digitally controlled impedance(DCI))
- a plurality of N-channel devices, the plurality of N-channel devices being divided into at least two groups; and (col.2, lines 6-col.3,line 26, ie 1st set, N1-N7 and 2nd set N11-N15)
- a plurality of P-channel devices, the plurality of P-channel devices being divided into at least two groups, (col.2, line 6-col.3, line 26, ie 1st set, P1-P7 and 2nd set P11-P15)
- wherein the driver control (fig.2, 201, ie DCI) is suitable for individually controlling selected ones of the groups of N-channel and P-channel devices on or off for providing internal termination to the transmission line. (col.4, line 50-col.5, line 7, wherein DCI controls(adjusts)/turn on or off of p and/or n devices until the desired corresponding transmission line termination provided by output driver)

As per claim 23, Schultz discloses a PCI-X DDR driver for providing internal termination to a transmission line, comprising:

- a plurality of N-channel devices, the plurality of N-channel devices being divided into at least two groups; (col.2, lines 6-col.3,line 26, ie 1st set, N1-N7 and 2nd set N11-N15)
- a plurality of P-channel devices, the plurality of P-channel devices being divided into at least two groups;
- means for individually controlling the groups of N-channel and P-channel devices; (col.4, line 50-col.5, line 7)
- wherein the controlling means is suitable for individually controlling selected ones of the groups of N-channel and P-channel devices on or off for providing internal termination to the transmission line. (col.4, line 50-col.5, line 7, wherein DCI controls(adjusts)/turn on or off of p and/or n devices until the desired corresponding transmission line termination provided by output driver)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-8, 13-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al. (US Patent 6,445,245) in view of Garlepp et al. (US Patent 6,133,773)

As per claims 2, 3, 5, 7, 13, 14, 16, 18, Schultz discloses all the limitations except wherein the driver control controls selected ones of the groups of N-channel and P-channel devices on or off for providing one of pull-up type termination, pull-down type termination, and symmetric type termination to the transmission line. However, Garlepp discloses variable resistive load allow to change the impedance (ie pullup, pulldown and symmetric type). (col.11, lines 39-56)

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Garlepp's teaching into Schultz's system for advantage of being able to change resistance without changing resistors.

As per claims 4, 15, Schultz discloses wherein the transmission line includes a transmission line end having a terminator impedance, and wherein the terminator impedance is connected to a power supply VDD. (col.9, line 63-col.10, line 19, ie termination resistors 601-602)

As per claims 6,17, Schultz discloses wherein the transmission line includes a transmission line end having a terminator impedance and wherein the terminator impedance is connected to a system ground VSS. (col.9, line 63-col.10, line 6)

As per claims 8,19, Shultz discloses wherein the transmission line includes a transmission line end having a terminator impedance and wherein the terminator impedance is connected to both a power supply VDD and a system ground VSS. (col.5, line 56-col.6, line 18, ie termination resistor 301-302 between Vcc voltage supply and ground voltage supply)

Response to Amendment

5. Applicant's amendment filed on 10/12/04 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. *Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9.00AM- 6:00PM.The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications.*

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.

Kim Huynh

Dec. 31, 2004

TIMVO
PRIMARY EXAMINER